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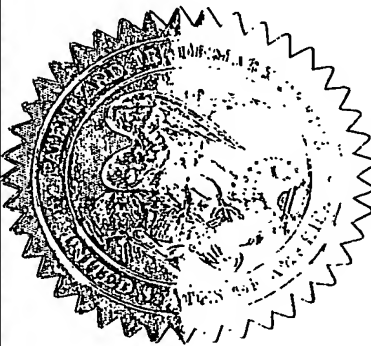
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PCT APPLICATION NUMBER: PCT/US00/14591



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Attorney Docket No.: 1624-2

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BOX PATENT APPLICATION
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Sir:

Enclosed for filing is the patent application of:

Inventors: Robert Lee

Title: UTM MACHINE IN 3½ INCH FLOPPY DISK CASE

Including:

- ☒ 1. A specification including claims consisting of 17 pages.
- ☒ 2. Formal/~~informal~~ drawings consisting of 4 sheets.
- ☒ 3. Declaration and Power of Attorney.

Additionally:

- ☒ 4. An assignment of the invention to UTM Systems Corporation is attached.
- ☒ 5. A Small Entity Declaration is attached.
- ☒ 6. A filing date in accordance with 37 CFR 1.10 is requested (Express mail certificate is part of this transmittal letter).

X 7.

COMPUTATION OF FEE

Claims	Number Filed	Number Extra		Basic Fee \$760/\$380
Total	26-20=	6	x\$18/\$9=	\$54.00
Indep.	9- 3=	6	x\$78/\$39=	\$234.00
Multi Dep.	xxx	xxx	x\$260/\$130=	

TOTAL Filing Fee: \$668.00

Assignment Recording Fee (\$40.00): \$40.00

- X 8. Check No. 13830 for \$668.00 for filing fee is enclosed.
X 9. Check No. 13831 for \$40.00 for assignment fee is enclosed.
 10. No fee is enclosed at this time.
X 11. Charge any additional fees to Deposit Account No. 07-1897.
X 12. A copy of this letter is enclosed.
X 13. A postcard is enclosed as acknowledgment of receipt of this application.

Respectfully submitted,

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UTM MACHINE IN 3 1/2 INCH FLOPPY DISK CASE

Cross Reference to Related Applications:

This application is related to UNIVERSAL TELLER MACHINE, U.S. Pat. App.
5 Ser. No. _____ (attorney docket no. 1624-1), filed on May 28, 1999, and THIN
MAGNETIC CARD READER HEAD, U.S. Pat. App. Ser. No. _____ (attorney
docket no. 1624-3), filed on May 27, 1999 which are incorporated by reference.

Technical Field:

10 The invention relates generally to electronic devices, and more particularly to
a UTM machine that can be inserted into a computer's 3 1/2 inch disk drive.

Background of the Invention:

Credit cards and debit cards have magnetic stripes that contain the
15 cardholder's personal information, e.g., name and card account number. There are
readers for reading the magnetic stripes at many retail point-of-sale locations. Debit
cards can be used at these locations by swiping the card through the reader and
entering a personal identification number (PIN) into the reader's keypad. Adequate
security is achieved by a secure communications connection between the reader
20 and a remote computer/server and by the cardholder possessing a debit card that
can be read by the reader and knowing the PIN associated with the card. Credit
cards can be used at these same locations by the cardholder signing a document for
comparison by a clerk to a signature on the back of the card. Adequate security is
achieved by the cardholder possessing a card that appears to the clerk to be
25 authentic and being able to produce a signature that matches the signature on the
back of the card.

For internet financial transactions, the above-described security features are
not available for credit cards and debit cards. There is no retail clerk to verify that
the card looks authentic and to compare the cardholder's signature with the
30 signature on the back of the card. There also is no secure communications
connection between a card reader that is connected to the user's host computer and

the remote computer/server. Solutions to these problems should greatly expand internet commerce.

Various companies, including IBM, Hewlett-Packard, Intel, and Wave have proposed solving this problem by including a "smart chip" in each personal computer.

5 The smart chip stores a unique identification code that cannot be read but which can be used with encryption to prove the identification of the chip to a remote computer/server across a communications line. Thus, encryption of this code provides a secure identification of the computer. Presumably, the owner of the host computer can be held responsible for its use. Entry of a PIN at a keyboard
10 connected to the host computer may also be required. With the ability to prove which host computer placed a communication for a financial transaction and that a particular PIN was used, adequate security will be achieved for many financial transactions.

Other companies have proposed the use of smart cards placed in a smart-
15 card reader at each host computer. Each smart card would include a smart chip as described above. The smart card is guarded by its owner like a key. The person who possesses the smart card is presumed to be its proper owner. Entry of a PIN at a keyboard connected to the host computer to which the smart card reader is also connected can also be required. With the ability to prove which smart card was used
20 for a financial transaction and that the PIN associated with the smart card was also used, adequate security will be achieved for many financial transactions.

SUMMARY OF THE INVENTION

The invention is a UTM machine in a case for a 3 1/2 inch floppy disk with
25 means for communicating to a personal computer through a standard floppy disk drive.

In one aspect of the invention, an electronic device includes a 3 1/2 inch floppy-disk housing with a slot, a thin read head, a disk-drive communications head, and communications circuit disposed within the housing. The slot receives a card
30 having a magnetic stripe that stores information, and the read head reads the information stored on the stripe. The communication circuit receives the information read by the read head and provides the information to the communications head. In another aspect, the communications circuit determines whether the card is within the

slot, and, if the card is not within the slot, indicates that the card has exited the slot since the read head read the information from the magnetic stripe. In another aspect of the invention, the communications circuit provides a unique device identity to the disk-drive communications head.

Thus, such a device can read debit or credit cards and can be inserted into and communicate with a floppy-disk drive. Thus, such a device eliminates the need for special connections to the host computer. Additionally, the device can ensure the security of a credit/debit-card transaction by canceling the transaction if the card is removed from the device before the transaction is completed or by storing a unique identification code that securely identifies the device (UTM machine).

BRIEF DESCRIPTION OF THE DRAWINGS

Figure 1 is a perspective view with portions broken away of a card reader (UTM machine) according to an embodiment of the invention.

Figure 2 is a schematic block diagram of the circuitry of the card reader of Figure 1.

Figure 3 is a perspective view of the very thin magnetic-stripe read head of Figure 2 according to an embodiment of the invention.

Figure 4 is a front perspective view of a computer system that can incorporate the card reader of Figure 1 according to an embodiment of the invention.

DETAILED DESCRIPTION OF THE INVENTION

Generally, the various aspects and embodiments of the invention provide security for internet credit/debit transactions, and the following description is a general overview of one of these embodiments. Because credit and debit cards are used remotely with no clerk to verify that the card is still present after the card has been read by the card reader, the reader senses whether the card is removed before the transaction or transactions are complete, and thus effectively acts like the card retainer included in many automatic teller (ATM) machines. For example, such a retainer prevents the cardholder from retrieving his ATM card until all transactions are complete. Also, each card reader is uniquely identified by a smart chip embedded therein, and each reader is associated with a respective cardholder.

Instead of placing a smart chip in the host computer itself or in a smart card guarded by its owner, the smart chip is placed in the card reader (UTM machine). The unique identification code of the smart chip is registered on a remote central computer/server in association with accurate identification of the cardholder to whom the reader was issued. Using a secure PIN, that cardholder can create a list of credit and debit cards that are authorized for use with the reader. The list can be stored in secure memory in the smart chip or on the remote central computer/server. Until the cardholder creates such a list, the system can be set up to work with an exact spelling of the cardholder's name. When the cardholder places a credit card or debit card in the reader, the name read from the card is compared with the name on the central computer/server associated with the unique identification code stored in the smart chip. If the name and code do not match, then the transaction may be disallowed for inadequate security.

The UTM machine in a 3 1/2 inch floppy disk case is portable and easily connected to or disconnected from the cardholder's computer or any other host computer. This allows the cardholder to easily guard his/her possession of the UTM machine and to permit others to use his/her computer without a security risk. Unlike the smart card, however, possession of only the smart-card reader and knowledge of a PIN is not enough to achieve a financial transaction. A credit card or debit card encoded with either a name that matches the name of the cardholder to which the reader was issued or a number that is on the authorized list is also required.

Typically, the UTM machine will be issued with a particular credit or debit card account in mind. However, once the unique identification code in the reader is stored in a central database in association with the name recorded on the card, adequate security is maintained to allow the reader to be used with any other card which is encoded with the same name or with an authorized number, even a card for a newly issued account. If the reader is stolen but the owner's credit cards are not available to the thief, it is very unlikely that the thief will be able to steal credit or debit cards belonging to another person with the same name or encoding the same numbers as those on the authorized list.

Unlike many ATMs, neither the smart chip in the card reader nor the cardholder's computer will attempt to decrypt the cardholder's PIN from encrypted information on the card if such information is present. Placing this decryption

information in every reader or in software distributed with each reader presents a security risk. Instead, for use with debit cards, the user will enter the PIN for the debit card, and the PIN will be encrypted through the use of the smart chip and transmitted to the remote computer/server, along with the encrypted unique
5 identification code for the reader, for comparison with the PIN stored on the remote computer/server as corresponding to the identification code.

As an additional security feature, particularly for use with credit cards where no PIN is used, one embodiment of the card reader includes a means for detecting whether the card is still in the reader after the name, account number, and other
10 information have been read from the card. The information transmitted from the reader includes the unique identification code in encrypted form, the name of the card holder, which may also be encrypted, and whether the card from which the information was read is still in the card reader. This security feature prevents the card reader from being used for a transaction after the cardholder has withdrawn the
15 card from the reader. With this card detection feature, the invention presents a valuable additional security feature for incorporation into a personal host computer having a smart chip such as those proposed by Intel, IBM, and others as described above.

Because the UTM machine includes a smart chip, the smart chip may be used
20 for other familiar smart-chip functions such as storing electronic cash. The cardholder who owns the UTM machine can insert a credit card or debit card and download electronic cash into the smart chip for use in transactions that are for very small amounts of money, where transaction fees or delays are unacceptable, or for use in anonymous transactions. Alternatively, the cardholder can give the UTM
25 machine to another person without providing the cardholder's credit card, and that other person can then spend the electronic cash stored in the smart chip without having access to the cardholder's credit- or debit-card accounts.

Figure 1 is a perspective view with portions broken away of a UTM machine
10 according to an embodiment of the invention. The UTM machine 10 includes a
30 conventional floppy-disk housing 12, which allows the UTM machine 10 to be inserted into and communicate with a conventional floppy-disk drive. The UTM machine 10 includes a slot 14 for receiving a credit/debit card 16, which has a magnetic stripe 18 for storing cardholder information (e.g., bank, account number).

A switch 20 may function as a power switch to activate the UTM machine 10 in response to the card 16 being inserted into the slot 14. Alternatively, a finger operated power switch may be set in the case 12 for operation prior to inserting the card. The switch 20 may also be used to determine the presence of a card in the slot. The switch 20 may be a mechanical micro switch or an optical switch.

A read head 22 reads the information on the magnetic stripe 18 as the card is inserted into the slot 14. The UTM machine 10 also includes conventional communication buffers 24 and 26, a smart chip 28 for storing a code that uniquely identifies the UTM machine 10 and performing typical smart chip encryption and value storage functions, a disk-drive communication head 30 that allows the UTM machine 10 to communicate with the read/write head (not shown) of a floppy disk drive, a conventional battery 32, and a conventional light emitting diode (LED) array 36 for indicating the power and status of the UTM machine 10.

To use the UTM machine 10, a cardholder activates the power switch and inserts his card 16 into the slot 14. He then inserts the UTM machine 10 (still containing the card 16) into a floppy-disk drive such that an edge 38 of the housing 12 enters the drive first and an under side 40 of the housing 12 faces the spindle of the disk drive. After all transactions are completed, the cardholder removes the UTM machine 10 from the disk drive, and then removes the card 16 from the UTM machine 10.

The smart chip 28 is preferably programmed for dual key (public/private) encryption such as for use with the secure electronic transactions (SET) protocol. The smart chip 28 may include electronic-key circuitry that is capable of securely encrypting a unique identifier and transmitting it to a remote computer/server such as with DES encryption or another encryption protocol. Furthermore, the LED array 36 may be a single LED having different colors. For example, one color may indicate that the UTM machine 10 is ready to accept the card 16 and read the information on the magnetic stripe 18, and another color may indicate successful reading of the information.

Figure 2 is a schematic block diagram of circuitry 44 for the UTM machine 10 of Figure 1 according to an embodiment of the invention. The circuit 44 includes the smart chip 28 and the LED 36. In addition, the circuit 44 includes optional card detection circuitry 46 for determining whether the card 16 (Figure 1) is inserted within

the slot 14 or not. For example, the circuitry 46 may make this determination by determining the state of the switch 20. Magnetic-stripe read circuitry 50 includes the read head 22 (Figure 1) and reads the magnetically encoded data from the magnetic stripe 18 and converts it into a digital read signal. A microcontroller 36 is coupled to
5 the smart chip 28, the LED 36, the detection circuitry 46, and the read circuitry 50. In one embodiment, the microcontroller 36 includes a processor, the buffers 24 and 26, memory, and other peripheral circuits. The microcontroller 48 receives the magnetic-stripe information from the circuitry 50 and the identification code from the smart chip 28 and provides them to an electromagnetic interface circuit 52, which
10 includes the communications head 30 (Figure 1). The circuit 52 converts this information and code into a signal that can be read by a disk-drive read/write head (not shown). A conventional power supply 54 includes the battery 32 (Figure 1) and provides power to the smart chip 28, the LED 36, the detection circuitry 46, the microcontroller 48, the read circuitry 50, the interface circuitry 52, and any other
15 circuitry or elements of the circuit 44. Some of these circuits and components may receive power all the time, and some may receive power only when the switch 20 or a finger operated power switch is "on".

Referring to Figures 1 and 2, in operation, a cardholder inserts the card 16 into the slot 14 of the UTM machine 10. As the magnetic stripe 18 moves by the
20 read head 22, the head 22 senses the magnetically encoded information on the stripe 18 and converts this information into electrical signals. The read circuitry 50 then converts these electrical signals into a digital signal that represents the stored information and provides this digital signal to the microcontroller 48, which stores this information in memory. After the microcontroller 48 receives and stores the
25 magnetic-stripe information, it causes the LED to indicate that the reading of the stripe 18 was successful. Alternatively, if there was a read error, the microcontroller 48 causes the LED array 36 to generate another color or to flash to indicate to the cardholder that he needs to remove the card 16 from the slot 14 and then re-insert it into the slot 14. In addition, in response to the state of the switch 20 changing in
30 response to the insertion of the card 16 into the slot 14, the microcontroller 48 can determine that the card 16 is within the slot 14.

Once the cardholder has inserted the card 16 into the slot 14 and the LED array 36 indicates proper reading of the magnetic-stripe information, the cardholder

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inserts the UTM machine 10 (with the card 16 still in the slot 14) into a floppy disk drive as described above. Once the UTM machine 10 is inserted in the disk drive, the microcontroller 48 obtains the unique identification code from the smart chip 28 and provides this unique code and the information read from the magnetic stripe 18 to a remote computer/server (not shown) via the communications circuitry 52, the disk drive read/write head, and the host computer in which the disk drive is installed. The host computer provides additional information (e.g., items to be purchased) regarding the transaction that the cardholder enters via a keyboard or other means. In one embodiment, the microcontroller 48 encrypts the identification code and magnetic-stripe information according to conventional encryption techniques. Alternatively, the identification code may be stored in encrypted form on the smart chip 28 or the information may be stored in encrypted form on the magnetic stripe. In such a case, the microcontroller 48 does not alter the code or the magnetic-stripe information before sending it to the remote computer/server. The microcontroller may also send confirmation to the remote computer/server that the card 16 is inserted within the slot 14, i.e., that the card 16 has not been removed from the slot 14, and thus that the UTM machine 10 has not been removed from the disk drive, since the magnetic-stripe information has been read.

Then, the remote computer/server determines whether the cardholder identified by the magnetic-stripe information is authorized to use the UTM machine 10 having the unique identification code. Typically, the remote computer/server stores the information for the cardholder who is authorized to use the particular UTM machine 10. Therefore, if the magnetic-stripe information corresponds to cardholder information stored for the unique code, then the remote computer/server allows the transaction to proceed. If, however, the magnetic-stripe information does not correspond to the cardholder information stored for the unique identification code, then the remote computer/server cancels the transaction.

The remote computer/server may cancel the requested transaction if the card 16 is removed from the slot 14 before the transaction is complete. The circuitry 46 provides information to the microcontroller 48 as to the relative position of the card 16 with respect to the slot 14. In one embodiment, the switch 20 detects when the cardholder removes the card 16 from the slot 14, and the circuitry 46 notifies the microcontroller 48. If the transaction is not completed, then the microcontroller 48

notifies the remote computer/server of the premature card removal, and the remote computer/server may cancel the transaction in response to this notification.

Alternatively, the remote computer/server may periodically poll the microcontroller 48, which, in response to the poll, notifies the remote computer/server of the card position (inserted or removed) with respect to the slot 14. Removal of the UTM machine 10 from the disk drive before the transaction is completed is interpreted by the host computer as the card 16 being removed from the slot 14.

Still referring to Figures 1 and 2, the switch 20 and the card detection circuitry 46 are omitted from the UTM machine 10 in another embodiment of the invention. In this embodiment, the microcontroller 48 determines that the card 16 is inserted into the slot 14 in response to receiving the magnetic-stripe information from the read circuitry 50 as the cardholder inserts the card 16 into the slot 14. Likewise, the microcontroller 48 determines that the card 16 is removed from the slot 14 in response to receiving the magnetic-stripe information as the cardholder removes the card 16 from the slot 14. Therefore, in this embodiment, the microcontroller 48 receives the magnetic-stripe information as the cardholder inserts the card 16 into the slot 14 and sets a corresponding flag. As long as the microcontroller 48 does not re-receive this information, it determines that the card 16 is present within the slot 14 and does not reset the flag. But once the microcontroller 48 receives the magnetic-stripe information again, it determines that the cardholder is removing or has removed the card 16 from the slot 14 and resets the flag. The microcontroller 48 may then notify the remote computer/server of the card's removal as discussed above.

Figure 3 is a perspective view of the magnetic-stripe read head 22 of Figure 1 according to an embodiment of the invention. The read head 22 is thin enough for placement within the floppy-disk housing 12 of Figure 1. This embodiment of the read head 22 is discussed in detail in patent application THIN MAGNETIC CARD READER HEAD, U.S. Pat. App. Ser. No. _____ (attorney docket no. 1624-3), which was filed on May 27, 1999 and which is incorporated by reference.

Figure 4 is a front perspective view of a computer system with which the UTM machine 10 of Figure 1 can be used according to an embodiment of the invention. The computer system 56 includes a computer 58 and a monitor 60, keyboard 62, and mouse 64 coupled to the computer 58. The computer 58 also includes a floppy

disk drive 60, which can receive and communicate with the UTM machine 10 of Figure 1.

From the foregoing it will be appreciated that, although specific embodiments of the invention have been described herein for purposes of illustration, various
5 modifications may be made without deviating from the spirit and scope of the invention.

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What is claimed:

1. An electronic device, comprising:
a floppy-disk housing;
a slot disposed within the housing and operable to receive a card having a magnetic stripe that stores information;
5 a read head disposed within the housing and operable to read the information stored on the magnetic stripe;
a disk-drive communications head disposed within the housing; and
a communications circuit disposed within the housing and coupled to the read and communications heads, the circuit operable to receive the information stored on
10 the magnetic strip from the read head and to provide the received information to the communications head.

2. The device of claim 1 wherein the read head comprises includes a read gap between two magnetic arms each having a portion extending laterally from said
15 gap which is wound with a wire having two ends coupled to the processor.

3. The device of claim 1 wherein the disk-drive communications head comprises a transducer.

20 4. The device of claim 1 wherein the floppy-disk housing is compatible with a 3.5-inch floppy drive.

25 5. The device of claim 1 wherein the disk-drive communications head is operable to communicate with a disk-drive read/write head.

6. An electronic device, comprising:
a floppy-disk housing;
a slot disposed within the housing and operable to receive a card having a magnetic stripe that stores information;
30 a read head disposed within the housing and operable to read the information stored on the magnetic stripe;

a communications head disposed within the housing and operable to communicate with a disk-drive head; and

a processing circuit disposed within the housing and coupled to the read and communications heads, the processing circuit operable to,

5 receive the information stored on the magnetic strip from the read head,

generate a write signal that includes the received information,

provide the write signal to the communications head,

determine whether the card is within the slot, and

10 if the card is not within the slot, indicate that the card has exited the slot since the read head read the information.

7. The electronic device of claim 6 wherein the processing circuit is operable to provide the indication that the card has exited the slot to the communications head.

8. The electronic device of claim 6 wherein the processor is operable to determine that the card has entered the slot in response to the read head reading the stored information as the card enters the slot and is operable to determine that the card has exited the slot in response to the read head reading the stored information as the card exits the slot.

9. An electronic device, comprising:
a floppy-disk housing;

25 a slot disposed within the housing and operable to receive a card having a magnetic stripe that stores information;

a read head disposed within the housing and operable to read the information stored on the magnetic stripe;

30 a sensor disposed within the housing and operable to sense the presence of the card within the slot;

a disk-drive communications head disposed within the housing; and

a processing circuit coupled to the read head, the sensor, and the communications head, the processing circuit operable to,

receive the information stored on the magnetic strip from the read head,
generate a write signal that includes the received information,
provide the write signal to the communications head,
5 determine whether the card is within the slot, and
if the card is within the slot, generate a signal that indicates that the card has remained within the slot since the read head read the information.

10 10. The device of claim 9 wherein the processing circuit comprises an electronic key.

11. The device of claim 9 wherein the processing circuit comprises a smart chip.

15 12. The device of claim 9 wherein the sensor comprises a mechanical switch.

16 13. The device of claim 9 wherein:
the slot comprises a single opening through which the card enters and exits
20 the slot; and
the sensor is operable to sense the insertion of the card into the slot in response to the read head reading the stored information as the card enters the slot and is operable to sense the removal of the card from the slot in response to the read head reading the stored information as the card exits the slot.

25 14. The device of claim 9 wherein the sensor comprises an optical sensor.

30 15. An electronic device, comprising:
a floppy-disk housing;
a slot disposed within the housing and operable to receive a card having a magnetic stripe that stores information;
a read head disposed within the housing and operable to read the information stored on the magnetic stripe;

a disk-drive communications head disposed within the housing; and
a circuit operable to uniquely identify the device and to provide this unique
identification to the communications head.

5 16. The device of claim 15 wherein the circuit comprises an electronic key.

17. The device of claim 15 wherein the circuit comprises a smart chip.

10 18. An electronic device, comprising:

 a floppy-disk housing;

 a slot disposed within the housing and operable to receive a card having a
magnetic stripe that stores information;

 a read head disposed within the housing and operable to read the information
stored on the magnetic stripe;

15 a communications head disposed within the housing and operable to
communicate with a disk-drive head; and

 a processing circuit disposed within the housing and coupled to the read and
communications heads, the circuit operable to,

20 receive the information stored on the magnetic strip from the read
head,

 generate a write signal that includes the received information,

 determine whether the card is within the slot,

25 if the card is not within the slot, then generate a card signal that
indicates that the card has exited the slot since the read head read the
information from the magnetic stripe,

 generate an identity signal that represents a unique identity of the
device, and

 provide the write, card, and identity signals to the communications
head.

30 19. A method, comprising:

 inserting a card into a slot disposed within a floppy-disk housing, the card
having a magnetic stripe that stores information;

reading the information stored on the magnetic stripe with a read head disposed within the floppy-disk housing; and
providing the read information to a disk-drive read/write head.

5 20. The method of claim 19, further comprising inserting the floppy-disk housing into a disk drive after inserting the card into the housing.

21. The method of claim 19 wherein the reading comprises reading the information as the card is being inserted into the slot.

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22. A method, comprising:
 inserting a card into a slot disposed within a floppy-disk housing, the card having a magnetic stripe that stores information;
 reading the information stored on the magnetic stripe with a read head disposed within the floppy-disk housing;
15 providing the read information to a disk-drive read/write head;
 determining whether the card is within the slot; and
 if the card is not within the slot, then providing to the disk-drive read/write head an indication that the card has exited the slot since the read head read the
20 information.

20

23. The method of claim 22, further comprising, if the determining indicates that the card is within the slot, then providing to the disk-drive read/write head an indication that the card has remained within the slot since the read head read the
25 information.

25

24. A method, comprising:
 inserting a card into a slot disposed within a floppy-disk housing, the card having a magnetic stripe that stores information;
30 reading the information stored on the magnetic stripe with a read head disposed within the floppy-disk housing;
 providing the read information to a disk-drive read/write head;
 determining whether the card is within the slot; and

30

if the card is within the slot, then providing to the disk-drive read/write head an indication that the card has remained within the slot since the read head read the information.

5 25. The method of claim 24, further comprising, if the determining indicates that the card is not within the slot, then providing to the disk-drive read/write head an indication that the card has exited the slot since the read head read the information.

10 26. A method, comprising:
 inserting a card into a slot of a device, the slot disposed within a floppy-disk housing, the card having a magnetic stripe that stores information;
 reading the information stored on the magnetic stripe with a read head disposed within the floppy-disk housing; and
 providing the read information and a unique identity of the device to a disk-
15 drive read/write head.

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ABSTRACT

A UTM machine in a 3 1/2 inch floppy disk case includes a floppy-disk housing with a slot, read head, smart chip, disk-drive communications head, and communications circuit disposed within the housing. The slot receives a card having a magnetic stripe that stores information, and the read head reads the information stored on the stripe. The communication circuit receives the information read by the read head and provides the received information to the communications head. The communications circuit may also determine whether the card is within the slot, and, if the card is not within the slot, indicate that the card has exited the slot since the read head read the information from the magnetic stripe. Alternatively, the communications circuit may provide a unique identity of the device to the disk-drive communications head. Thus, such a device can read debit or credit cards and can be inserted into and communicate with a floppy disk drive. This eliminates the need for special connections to a computer. Additionally, the device can ensure the security of the internet transactions by disallowing a transaction if the card is not present in the device while the transaction is taking place, or by storing a unique identification code that can be compared with the information read from the magnetic stripe of the card.

**DECLARATION AND POWER OF ATTORNEY
IN PATENT APPLICATION**

Attorney Docket No.: 1624-2

As a below named inventor, I hereby declare:

My residence, post office address and citizenship are as stated below next to my name.

I believe that I am the original, first and sole inventor (if only one name is listed below) or a joint inventor (if plural inventors are listed below) of the subject matter that is claimed and for which a patent is sought on the invention entitled:

UTM MACHINE IN 3 1/2 INCH FLOPPY DISK CASE

the specification of which

- ☒ is attached hereto.
- ☐ was filed on _____ as U.S. Application Serial No. (or PCT International Application No.) _____ and was amended on _____ (if applicable).

I hereby state that I have reviewed and understand the contents of the above-identified specification, including the claims, as amended by any amendment referred to above.

I acknowledge the duty to disclose information which is material to patentability as defined in Title 37, Code of Federal Regulations, Section 1.56.

I hereby claim foreign priority benefits under Title 35, United States Code, Section 119(a)-(d) or Section 365(b), of any foreign application(s) for patent or inventor's certificate, or Section 365(a) of any PCT international application designating at least one country other than the United States listed below and have also identified below any foreign application for patent or inventor's certificate having a filing date before that of the application on which priority is claimed.

09322669.052897

Prior Foreign Application(s):

<u>Number</u>	<u>Country</u>	<u>Date Filed</u>	<u>Priority Claimed</u>
_____	_____	_____ Day/Mo/Year	_____ Yes/No
_____	_____	_____ Day/Mo/Year	_____ Yes/No

I hereby claim the benefit under Title 35, United States Code Section 119(e) of any United States provisional application(s) listed below.

<u>Application No.</u>	<u>Filing Date</u>
_____	_____

I hereby claim the benefit under Title 35, United States Code, Section 120 of any United States application(s), or Section 365(c) of any PCT international application designating the United States listed below, and, insofar as the subject matter of each of the claims of this application is not disclosed in the prior United States or PCT international application in the manner provided by the first paragraph of Title 35, United States Code, Section 112, I acknowledge the duty to disclose information which is material to patentability as defined in Title 37, Code of Federal Regulations, Section 1.56, which became available between the filing date of the prior application and the national or PCT international filing date of this application.

<u>Application Number</u>	<u>Filing Date</u>	<u>Status: Patented Pending/Abandoned</u>
_____	_____	_____
_____	_____	_____
_____	_____	_____

I hereby appoint the attorneys associated with Customer No. 000996 to prosecute this application and to transact all business in the United States Patent and Trademark Office connected therewith.

Address all correspondence and phone calls to:

Bryan A. Santarelli
GRAYBEAL JACKSON HALEY LLP
777-108th Avenue NE
Suite 2460
Bellevue, WA 98004-5117
(425) 455-5575


I hereby further declare that all statements made herein of my own knowledge are true and that all statements made on information and belief are believed to be true; and further that these statements were made with the knowledge that willful false statements and the like so made are punishable by fine or imprisonment, or both, under Section 1001 of Title 18 of the United States Code, and that such willful false statements may jeopardize the validity of the application or any patent issued thereon.

Robert Lee
Full Name of Inventor

Canada
Citizenship

717 140th Ave. S.E., Bellevue, Washington 98005
Residence

Post Office Address (if different from Residence)


Inventor's Signature

May 28, 1999
Date

09322669-052899

Applicant or Patentee: Robert Lee

Serial or Patent No.: _____ Attorney Docket No.: 1624-2

Filed or Issued: Filed May 28, 1999

For: UTM MACHINE IN 3½ INCH FLOPPY DISK CASE

**VERIFIED STATEMENT (DECLARATION) CLAIMING SMALL ENTITY STATUS
(37 CFR 1.9(f) AND 1.27(c)) - SMALL BUSINESS CONCERN**

I hereby declare that I am

- ☐ the owner of the small business concern identified below:
- ☒ an official of the small business concern empowered to act on behalf of the concern identified below:

NAME OF CONCERN UTM Systems Corporation

ADDRESS OF CONCERN 10900 NE 8th Street, Suite 830

Bellevue, Washington 98004-4454

I hereby declare that the above-identified small business qualifies as a small business concern as defined in 13 CFR 121.3-18, and reproduced in 37 CFR 1.9(d), for purposes of paying reduced fees under Section 41(a) and (b) of Title 35, United States Code, in that the number of employees of the concern, including those of its affiliates, does not exceed 500 persons. For purposes of this statement, (1) the number of employees of the business concern is the average over the previous fiscal year of the concern of the persons employed on a full-time, part-time or temporary basis during each of the pay periods of the fiscal year, and (2) concerns are affiliates of each other when either, directly or indirectly, one concern controls or has the power to control the other, or a third party of parties controls or has the power to control both.

I hereby declare that rights under contract or law have been conveyed to and remain with the small business concern identified above with regard to the invention described in

- ☒ the specification filed herewith with the title as listed above.
- ☐ the application identified above.
- ☐ the patent identified above.

If the rights held by the above-identified small business concern are not exclusive, each individual, concern or organization having rights to the invention is listed below* and no rights to the invention are held by any person, other than the inventor, who could not qualify as a small business concern under 37 CFR 1.9(d) or by any concern which would not qualify as a small business concern under 37 CFR 1.9(d) or a nonprofit organization under 37 CFR 1.9(e).

*NOTE: Separate verified statements are required from each named person, concern or organization having rights to the invention averring to their status as small entities. (37 CFR 1.27).

FULL NAME _____

ADDRESS _____

☐ INDIVIDUAL ☐ SMALL BUSINESS CONCERN ☐ NONPROFIT ORGANIZATION

FULL NAME _____

ADDRESS _____

☐ INDIVIDUAL ☐ SMALL BUSINESS CONCERN ☐ NONPROFIT ORGANIZATION

FULL NAME _____

ADDRESS _____

☐ INDIVIDUAL ☐ SMALL BUSINESS CONCERN ☐ NONPROFIT ORGANIZATION

I acknowledge the duty to file, in this application or patent, notification of any change in status resulting in loss of entitlement to small entity status prior to paying, or at the time of paying, the earliest of the issue fee or any maintenance fee due after the date on which status as a small entity is no longer appropriate. (37 CFR 1.28(b)).

SECRET

3

668250-6992860

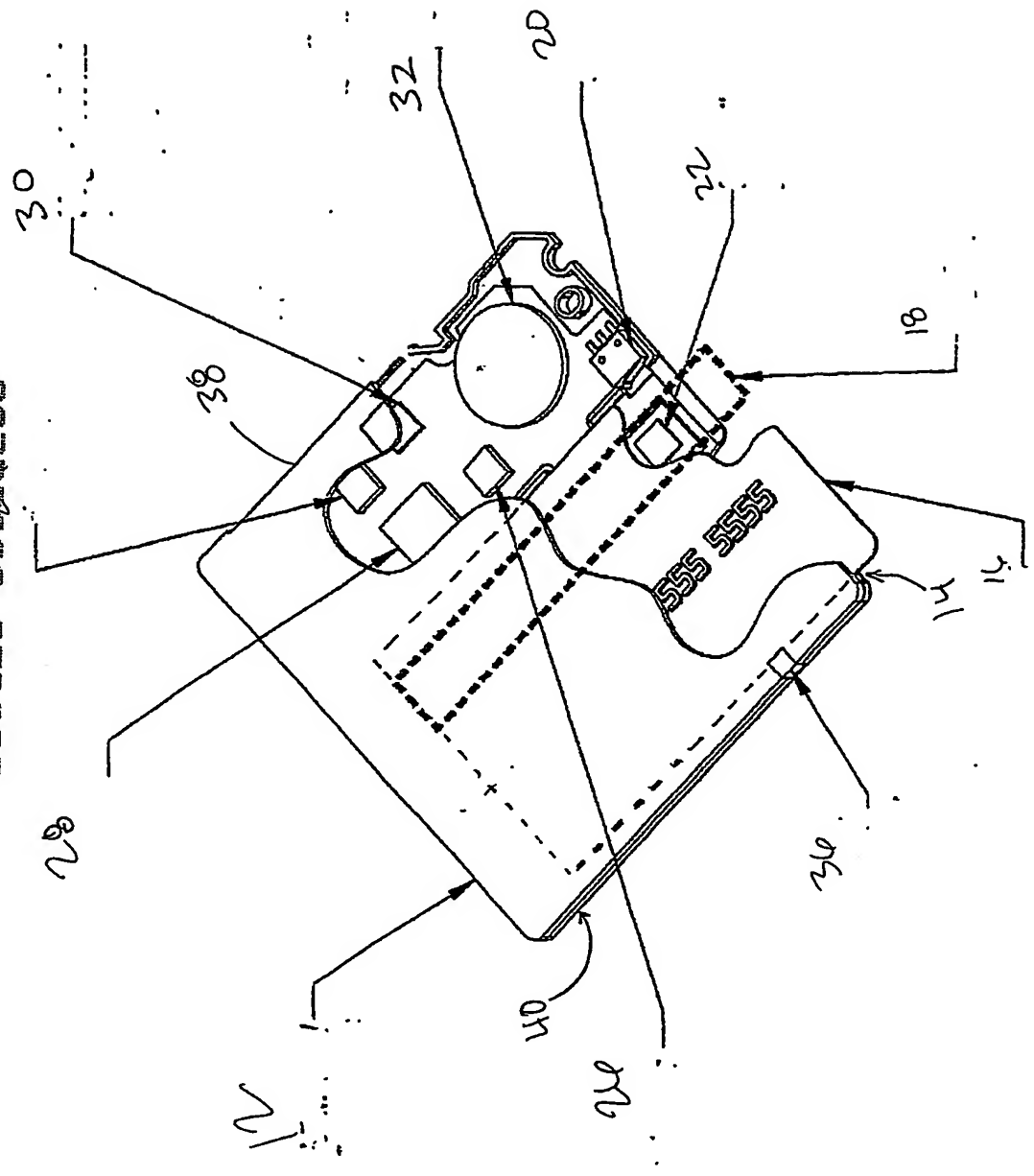


Figure 1

09322569.052899

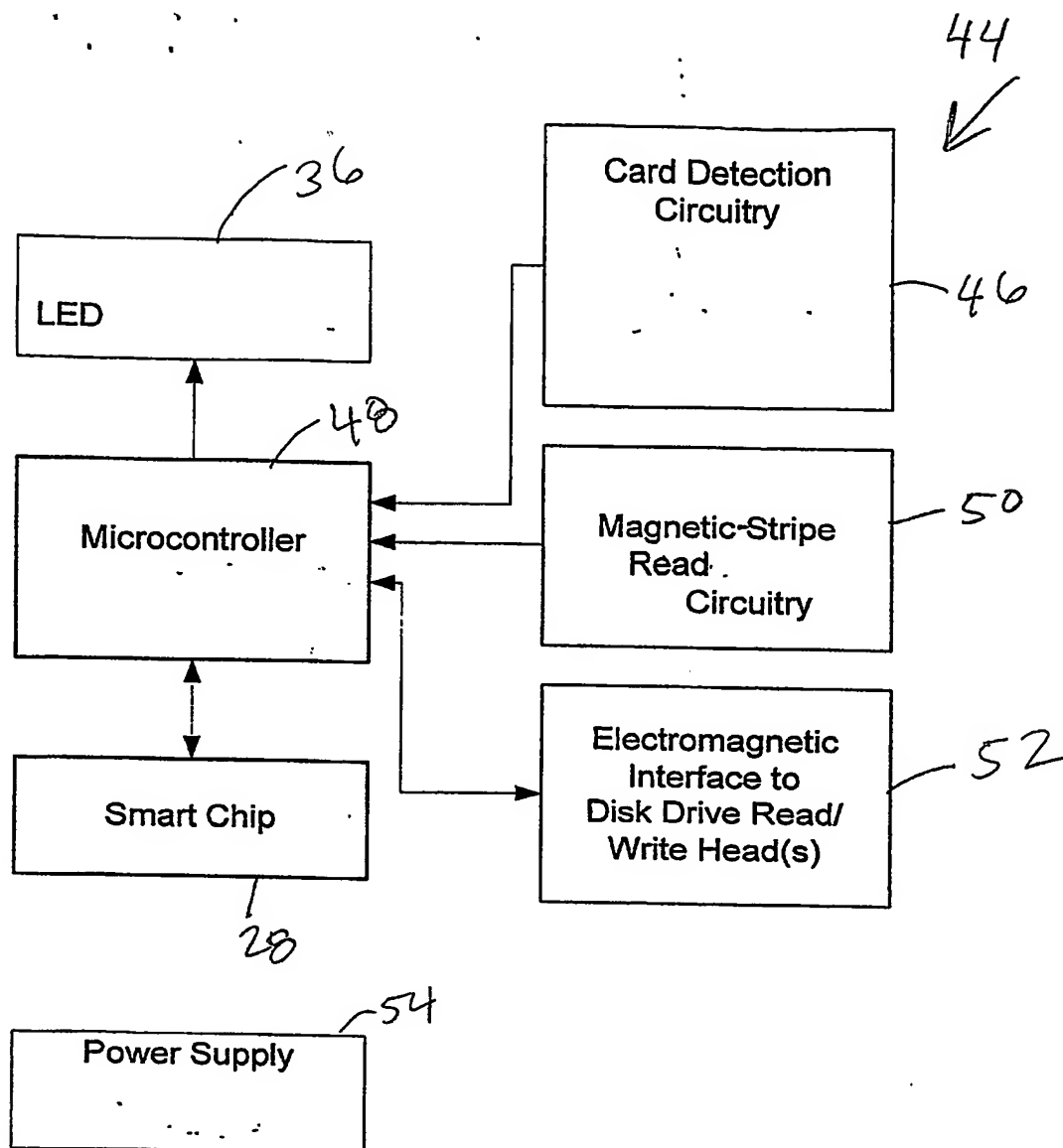


Figure 2

22

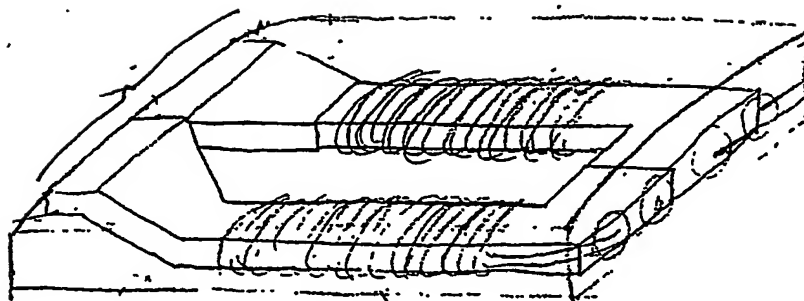
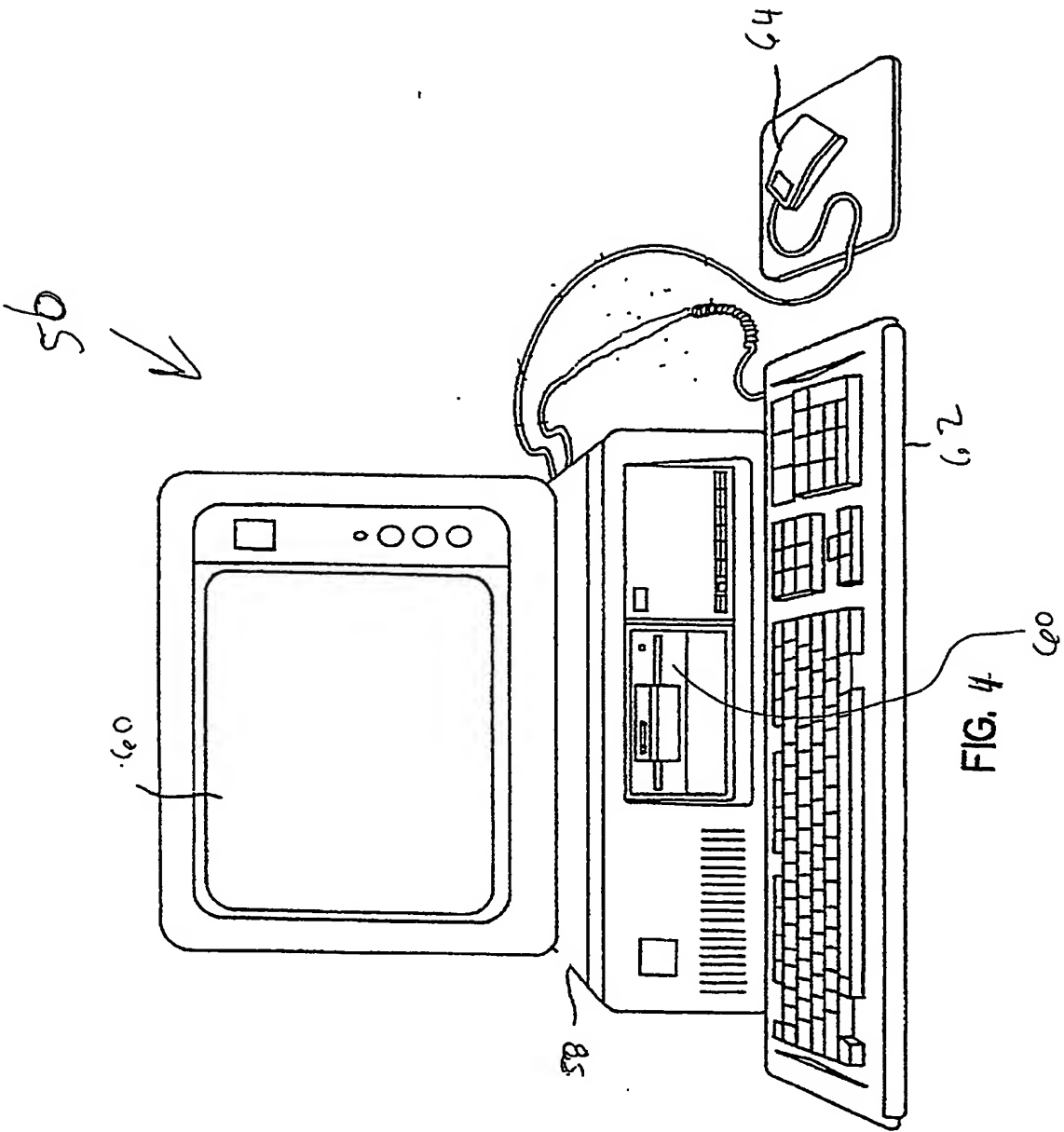


FIG. - 3

668250-69922260



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